

LOAD TESTING OF MANUFACTURED PRODUCTS

It will occasionally be necessary to field test falsework devices, components or systems. In general, all field testing should provide for a minimum safety factor of 2.5. Systems can be tested to a predetermined value or to failure. The working value of similar components or systems would then be 40% ($1/2.5$) of the accepted test result.

Testing should provide for, as a minimum, the following criteria:

- A .Cyclic loading using a minimum of 10 cycles.
- B .Measurement for strain, stress or other values.
- C . Increasing load incrementally and noting effects.
- D . Other necessary features unique to the system tested.

Testing criteria and result evaluation should be discussed with the falsework section of the Office of Structure Construction prior to testing.

Following is an example of the testing criteria used for the approval of C-clamps:

TESTING

Testing shall conform to the following criteria:

- A . The system will be loaded to 2.5 times its design load and cycled from zero to maximum load 10 times.
- B . The maximum allowable slip between flange and angle shall not exceed 1/8" total.
- C. Clamp body is not to bear on flange or angle.
- D. Measure strain in clamp when tightened, after test and upon release.
- E . Torque clamp to predetermined level and remeasure after test.

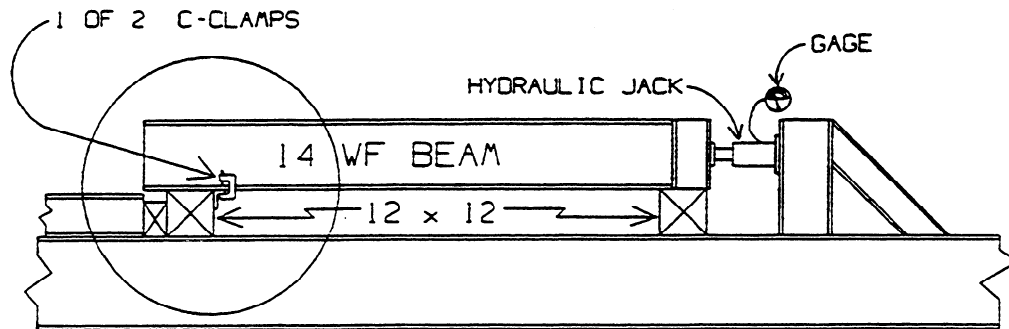
FIELD TEST APPROVED C-CLAMP

The following describes non-commercial shop fabricated C-clamps tested in accordance with the testing criteria described above:

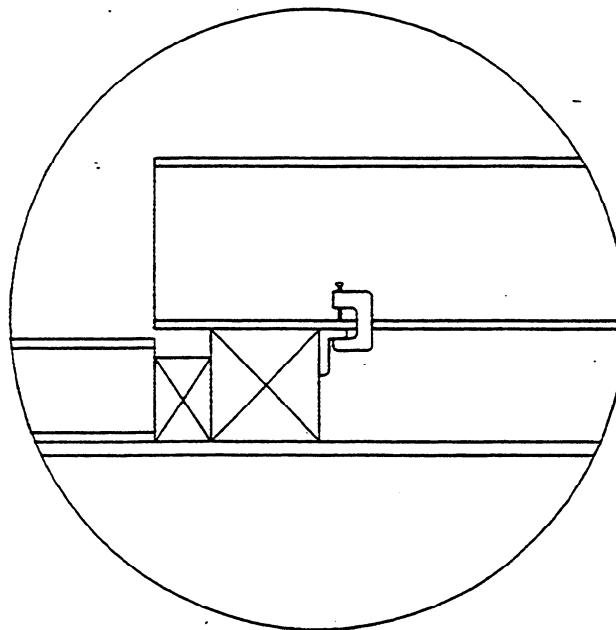
The test was performed with two C-clamps holding an angle to the bottom side of a WF section. The other leg of the angle abutted a 12 x 12 timber. Significant C-clamp slip occurred when the WF beam was loaded to 16,000 pounds. No significant slip was observed for the 10 test loadings of up to 15,000 pounds applied to the end of the WF section. Test loadings were performed with a hydraulic jack equipped with a gage. See Figure 1 for loading configuration.

Based on the test results the above described C-clamp may be used to resist horizontal forces up to 3,000 pounds per clamp when these clamps are torqued to 90 foot-pounds. The 3,000 pound value per clamp equals the 15,000 pound test load divided by a 2.5 safety factor divided by 2 clamps. Use will be restricted to beams with non-sloping flanges.

In addition to the above, approved C-clamps may be used to resist 500 pound loads applied to falsework from any direction providing the clamps are not installed on the tail end of stingers. Clamps used in this capacity shall be installed on the supported side of the beam or stringer which is to be the heaviest loaded.



TEST BED



1 OF 2 C-CLAMPS HOLDING ANGLE TO BOTTOM
FLANGE OF 14 WF BEAM (ONE EACH SIDE)

FIGURE 1